

Supporting Figure S1

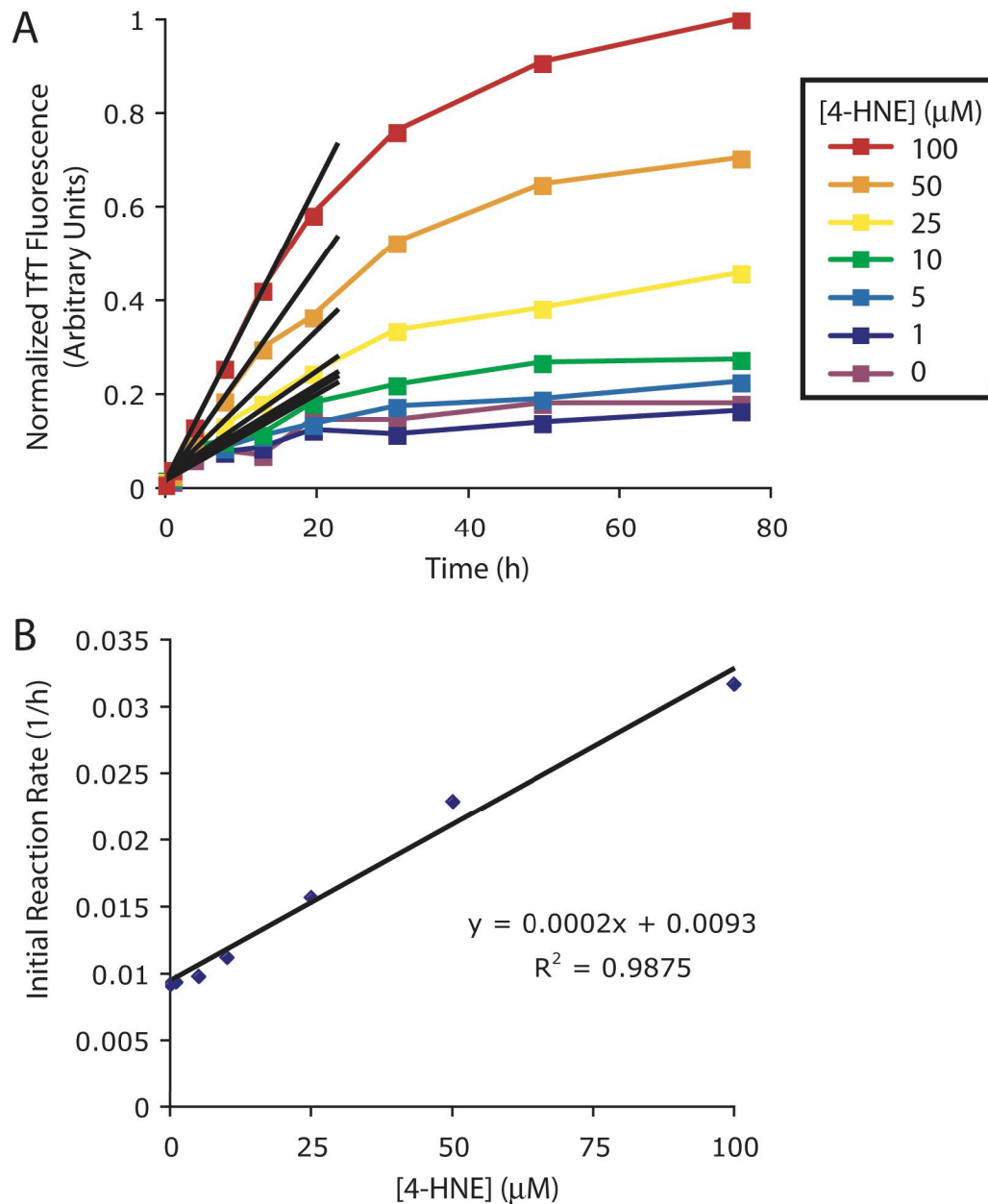


Figure S1: The initial rate of reaction was the slope of the line connecting the first 8 hours of Tft fluorescence (A). The initial reaction rate is proportional to the concentration of 4-HNE in solution (B).

Supporting Figure S2

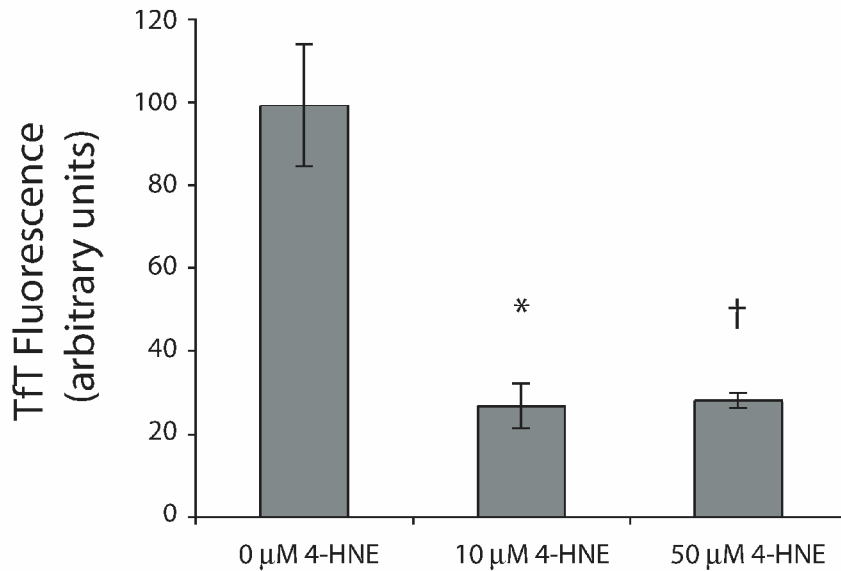


Figure S2: A β 1-42 M35L was expressed and purified from *E. coli* using an expression plasmid and purification protocol generously given to us by Roland Riek at The Salk Institute. A β 1-42 M35L was pretreated with NaOH in the same manner as synthetic A β 1-40, and aggregated quiescently at 37 °C for 15 days (10 μ M A β 1-42 M35L, 0, 10, or 50 μ M 4-HNE, 300 mM NaCl, 50 mM NaPi, pH 7.4). Amyloid formation was measured by Tft fluorescence (20 μ L of aggregation sample added to 480 μ L of 5 μ M Tft in 50 mM NaPi). The fluorescence measurements corrected for background are shown above as the averages of 4 samples and their standard error means. 4-HNE seems to inhibit aggregation of A β 1-42 M35L, similarly to how it inhibits fibril formation by A β 1-40. The differences between these samples are statistically significant (* $p = 0.007$, † $p = 0.019$).

Supporting Figure S3

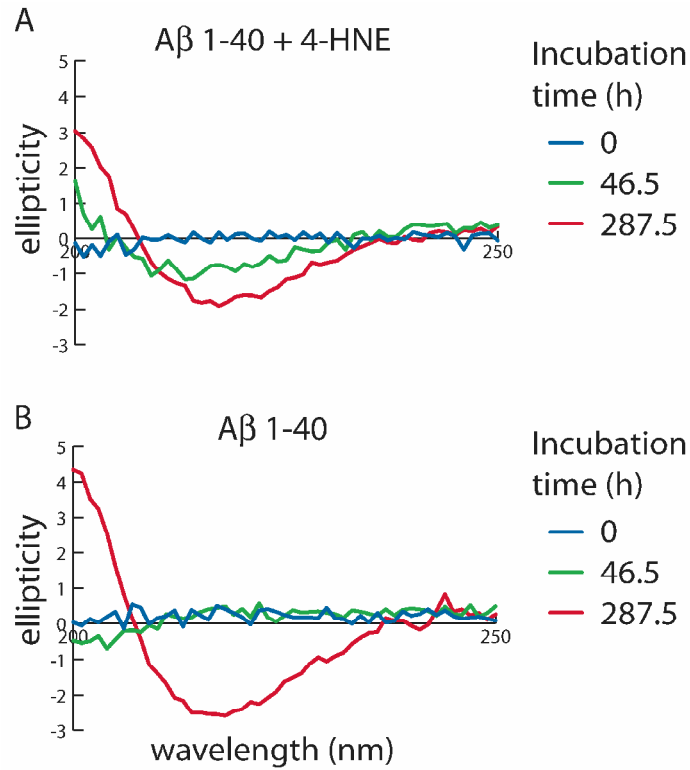


Figure S3: Aβ 1-40 (100 μM) with (100 μM; A) or without (B) 4-HNE incubated quiescently for the specified amount of time was subjected to ultracentrifugation (1h at 100,000 x g) in a Beckman TL-100 Ultracentrifuge. The pellet was resuspended in the original volume of 50 mM NaPi and analyzed by circular dichroism spectroscopy (Aviv Model 202SF Stopped Flow Circular Dichroism Spectrometer).

Supporting Figure S4

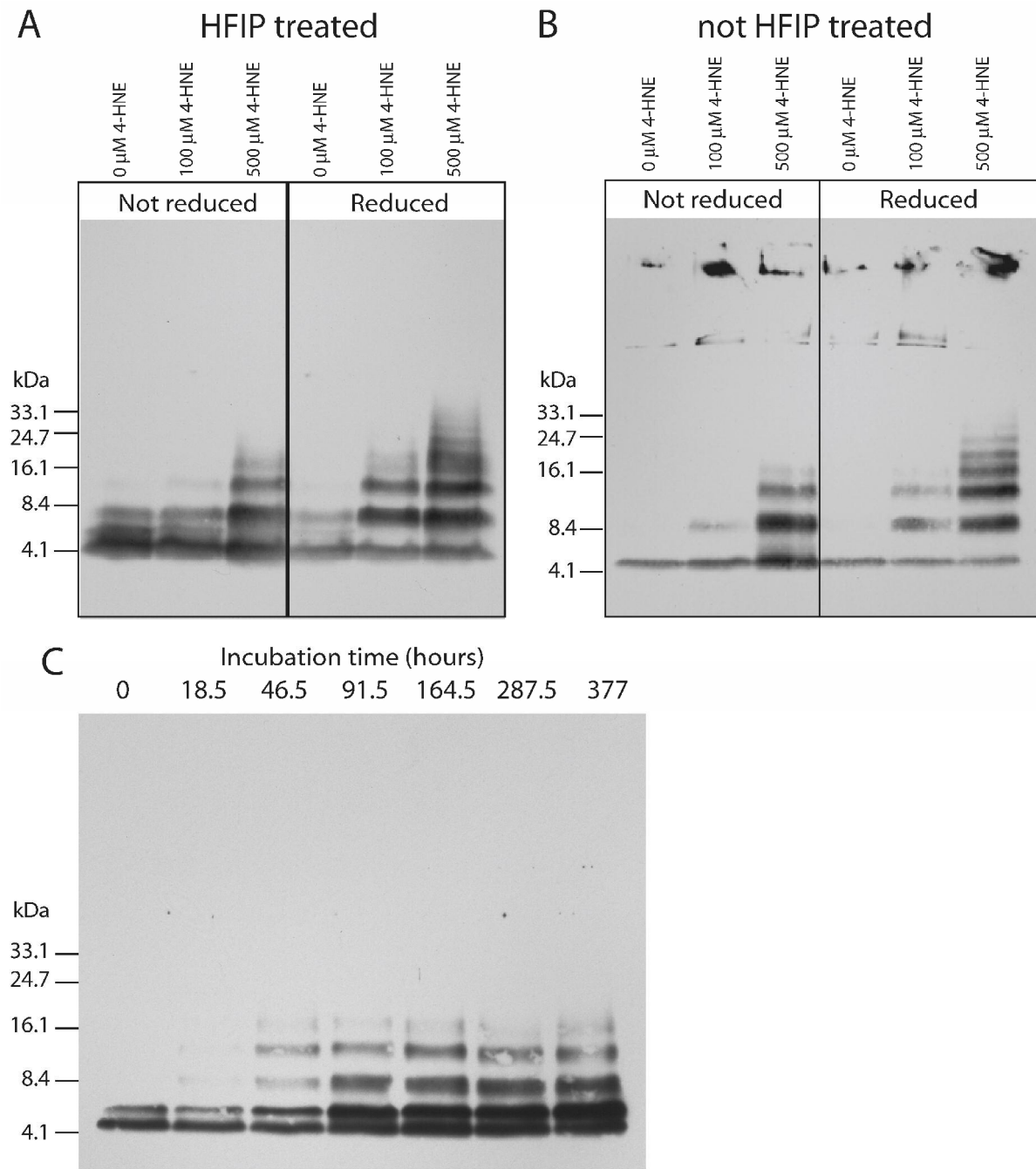


Figure S4: A. A β 1-40 (100 μ M) and 4-HNE (0, 100, or 500 μ M) were incubated at 37 $^{\circ}$ C on a rocking platform for 4 days. The resultant mixture was reduced with NaBH₄ or not, dissolved in 70% HFIP sonicated for 1 h, lyophilized, and run on SDS-PAGE (16.5 % acrylamide) followed by a western blot detection, probing the system with 6E10 antibody. B. Samples were prepared as in A but not treated with HFIP. C. A β 1-40 (100 μ M) and 4-HNE (100 μ M) were incubated quiescently at 37 $^{\circ}$ C, removed at the indicated timepoints, and prepared as in A with the NaBH₄ reduction step.